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ABSTRACT

This curriculum guide provides materials for teachers to use in developing a 1- or 2-year course in horticulture-related occupations for at-risk and special education students. It is one of 28 semester courses in agricultural science and technology for Texas high schools. The program prepares low-achieving students with employability skills that are transferable among horticulture-related occupations or into other vocational programs. The course guide is organized in four sections. The first section lists essential elements common to all agricultural science and technology courses. The second section lists essential elements specific to this course. The third section lists the units and topics of instruction and suggested time allocations for each unit and topic. Listed also are the catalog numbers of corresponding curriculum materials available from the Instructional Materials Service of Texas A&M University. Topics covered in the course include the following: plant classification and identification, structures and equipment used in producing plants, caring for greenhouse plants, selecting soils and other growing media, plant propagation, plant selection and breeding, growing greenhouse plants and nursery stock, developing and maintaining landscapes and turfgrass, controlling disease, arranging flowers, calculating production costs, understanding marketing and financial records, selecting and maintaining horticultural tools and equipment, safe work practices, planning and conducting leadership activities related to horticultural occupations, and planning and conducting supervised agricultural experience programs. The final section provides topic goals and objectives targeted for the completion of the topic. (KC)

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CURRICULUM GUIDE

FOR

AGRIBUSINESS 161

HORTICULTURAL RELATED OCCUPATIONS
VEH HORTICULTURE RELATED

DEVELOPED

BY

INSTRUCTIONAL MATERIALS SERVICE

DEPARTMENT OF AGRICULTURAL EDUCATION

TEXAS A & M UNIVERSITY

COLLEGE STATION, TEXAS

IN

COOPERATION

WITH

TEXAS EDUCATION AGENCY

DIVISION OF VOCATIONAL AND APPLIED TECHNOLOGY EDUCATION

AUSTIN, TEXAS

AUGUST 1992

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PREFACE

Agribusiness 161 includes both the Horticultural Related Occupations course (12630161) and the VEH Horticulture Related course (13630161).

The Horticultural Related Occupations course is a 1 to 2 year pre-employment laboratory program of 1 to 3 units for students in grades 9 through 12. This program is designed for students one or more years below grade level in achievement in three or more academic courses, or below grade level as evidenced by a score at or below the 25th percentile on a standardized test at the time of enrollment.

One-hour pre-employment classes may be offered only in ninth grade. A student may enroll for more than one year, if the school district feels the student will benefit from the course.

The Horticultural Related Occupations course prepares students with employability skills which are transferable among horticultural related occupations. It retains 'at risk' students in school by providing successful educational experiences. The course also prepares students for entry into other vocational programs.

The Horticultural Related Occupations course includes the essential elements common to all agricultural science and technology courses. In addition, it includes the essential elements, concepts, and skills related specifically to horticultural related occupations.

The VEH Horticulture Related course is a 1 to 2 year VEH pre-employment laboratory program of 1 to 2 units for students in grades 7 through 12. This program is designed for handicapped students whose greater degree of impairment precludes integration into a regular vocational education class.

The VEH pre-employment laboratory program is a more restrictive placement for the more severely handicapped who are in special education programs. Students in this program are instructed with a specially designed curriculum and may participate in special education classes for more than 50% of the instructional day.

One-hour VEH pre-employment classes may be offered only in seventh through ninth grades.

The units and topics of instruction, and the goals and objectives in this curriculum guide are based on recommendations by members of the State Advisory Committee for the Agribusiness 161 - Horticultural Related Occupations / VEH Horticulture Related courses.

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VEH HORTICULTURE RELATED

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USING THE

CURRICULUM GUIDE

FOR

AGRIBUSINESS 161
HORTICULTURAL RELATED OCCUPATIONS
VEH HORTICULTURE RELATED

Pages 1 and 2 of this guide list the essential elements common to all agricultural science and technology courses. A list of essential elements specific to Agribusiness 161 is on page 3.

Pages 4 through 8 contain a list of units and topics of instruction and suggested time allocations for each unit and topic. The 'periods of instruction' listed for each unit and topic is for a one unit course. The essential elements listed are those that correspond to each topic of instruction.

Also listed on pages 4 through 8 are the catalog numbers of Instructional Materials Service (IMS) curriculum materials that teachers may use in teaching the topics and satisfying the essential element requirements. Materials listed in the Level I column are more basic than those materials listed in the Level II column. More than one suggested item of curriculum materials may be listed for effective instructional presentation of some topics. If all suggested curriculum materials from either column are used, the essential element requirements for a one unit course will be met.

The final section (pages 9 through 31) in the guide provides topic goals and objectives to be met upon completion of each topic. Also shown with the topic goals and objectives are the corresponding IMS curriculum materials listed on the 'Units and Topics of Instruction' page. The catalog numbers listed on the left side of the '/' mark are the Level I materials. Catalog numbers listed on the right side of the '/' mark are the Level II materials. This section should be particularly useful to teachers in preparing lesson plans and selecting materials to meet the needs of individual students.

Teachers should provide a more detailed presentation of the subject matter for students enrolled in the courses for additional (2 or 3) units of credit. Most student material topics contain additional skill and enhancement activities. Teachers may assign students these activities to meet the requirements of a two or three unit course.

Each student material topic contains a list of references used in its development. If a more detailed presentation of subject matter is necessary, the teacher may acquire some of these references from IMS and/or from the publishers cited in the reference section of each topic.

ESSENTIAL ELEMENTS

§75.82 Agricultural Science and Technology

(a) The elements in this subsection are common to all agricultural science and technology courses unless otherwise indicated and shall be included in each course at the appropriate level. Every school offering agricultural science and technology shall provide courses which include the following essential elements:

(1) Leadership concepts and skills. The student shall be provided opportunities to:

(A) demonstrate skills, characteristics, and responsibilities of leaders and effective group members;

(B) demonstrate a knowledge of parliamentary procedure principles;

(C) plan and conduct leadership activities; and

(D) prepare for effective citizenship and for participation in our democratic society.

(2) Concepts and skills related to successful employment and/or post secondary training. The student shall be provided opportunities to:

(A) identify employment opportunities and preparation requirements in chosen fields;

(B) identify effective methods to secure and terminate employment;

(C) demonstrate effective communication skills, both oral and written, and follow through on assigned tasks;

(D) demonstrate dependability and punctuality;

(E) demonstrate productive work habits and attitudes;

(F) understand the importance of taking pride in the quality of work performed;

(G) recognize the dignity in work;

(H) develop skills in planning and organizing work;

(I) apply required methods and sequences when performing tasks;

(J) apply principles of time management and work simplifications when performing assigned tasks;

(K) identify ethical practices and responsibilities; and

(L) understand the importance of the application of organizational policies and procedures.

(3) Concepts and skills associated with entrepreneurship. The student shall be provided opportunities to:

(A) identify opportunities for business ownership;

(B) understand the risk and profit motive factor;

(C) understand the elements and advantages of the free enterprise system; and

(D) explain the role of small business in the free enterprise system.

(4) Concepts and skills related to safety and safe working conditions. The student shall be provided opportunities to identify and apply safe working practices to all training situations.

(5) Concepts and skills associated with human relations and personality development. The student shall be provided opportunities to:

(A) understand the importance of maintaining good health and proper appearance for effective job performance;

(B) understand oneself and others;

(C) exercise self-control;

(D) accept and use criticism;

(E) recognize basic human relationships as they relate to business success; and

(F) demonstrate characteristics for successful working relationships.

(6) Concepts and skills related to personal and business management. The student shall be provided opportunities to:

(A) explain how management assists in reaching personal and family goals;

(B) explain the management process;

(C) describe the role of management in controlling stress;

(D) identify and understand personal checking accounts;

(E) identify and understand personal loan application processes;

(F) identify and understand different financial institutions;

(G) identify the role and functions of business management;

(H) understand the lines of authority; and

(I) identify effective supervisory techniques.

(7) Concepts and skills related to supervised agricultural activities. The student shall be provided opportunities to plan and conduct/perform supervised agricultural activities.

(ee) Agribusiness 161 - Horticultural Related Occupations / VEH Horticulture Related (1-3 units) shall be a shop/laboratory-oriented course and shall include the essential elements and the concepts and skills related to horticultural related occupations. The student shall be provided opportunities to:

(1) understand plant classification;

(2) identify plants by leaf, flower, bud, and stem characteristics;

(3) identify structures and equipment used in producing greenhouse, ornamental, and nursery plants;

(4) determine greenhouse environmental controls;

(5) water and feed greenhouse plants;

(6) select and identify propagation media, nursery soils, compost, mulches, soil mixtures, fertilizers, and other growth materials;

(7) understand and perform the methods of propagating plants;

(8) understand selection, breeding, and reproduction of plants;

(9) grow greenhouse plants;

(10) grow nursery stock, fruits and nuts, vegetables, and ornamentals;

(11) develop and maintain the landscape and turfgrasses;

(12) identify and control diseases, insects, organisms, and weeds;

(13) determine floral design accessories, arranging, and judging;

(14) calculate production costs;

(15) understand marketing, labeling, pricing, displaying, advertising, financial control, credit, records, and accounts;

(16) select, operate, maintain, and repair horticultural tools and equipment;

(17) recognize safe work practices that apply to horticultural related occupations;

(18) plan and conduct leadership activities related to horticultural occupations; and

(19) plan and conduct supervised agricultural experience programs to include personal financial management and explore entrepreneurial and career opportunities.

AGRIBUSINESS 161 - HORTICULTURAL RELATED OCCUPATIONS / VEH HORTICULTURE RELATED

UNITS AND TOPICS OF INSTRUCTION	PERIODS OF INSTRUCTION	ESSENTIAL ELEMENTS	STUDENT MATERIALS LEVEL I	LEVEL II
A. Understand Plant Classification	5			
1. Name Plants Scientifically	2	(ee)(1)	8160-A	8927-A
2. Use Plant Characteristics to Classify Plants	3	(ee)(1)	8160-B	8927-A
B. Identify Plants by Leaf, Flower, Bud, and Stem Characteristics	10			
1. Recognize Leaf Characteristics	3	(ee)(2)	8161-A	8927-A
2. Identify Flower Chracteristics	3	(ee)(2)	8161-B	8930-B
3. Recognize Bud Characteristics	2	(ee)(2)	8161-C	8927-A
4. Identify Stem Characteristics	2	(ee)(2)	8161-C	8927-A
C. Identify Structures and Equipment Used in Producing Greenhouse, Ornamental, and Nursery Plants	5			
1. Identify Greenhouse Structures and Equipment	3	(ee)(3)	8162-A	8933-B,8933-C 8933-D
2. Recognize Nursery Structures and Equipment	2	(ee)(3),(ee)(16)	8162-B	8929-A,8933-B
D. Determine Greenhouse Environmental Controls	5			
1. Recognize the Environmental Requirements of Greenhouse Plants	1	(ee)(4)	8163-A	8934-A,8934-B
2. Control Greenhouse Temperature	1	(ee)(4)	8163-B	8934-A
3. Control Greenhouse Humidity	1	(ee)(4)	8163-C	8934-A
4. Control Greenhouse Ventilation	1	(ee)(4)	8163-C	8934-A
5. Control Greenhouse Light	1	(ee)(4)	8163-D	8934-B

UNITS AND TOPICS OF INSTRUCTION	PERIODS OF INSTRUCTION	ESSENTIAL ELEMENTS	STUDENT MATERIALS LEVEL I - LEVEL II	
E. Water and Feed Greenhouse Plants	10			
1. Identify the Functions of Water in Plants	1	(ee)(5)	8164-A	8931-G
2. Identify the Effects of Water on Plant Growth	1	(ee)(5)	8164-B	8931-G
3. Determine the Frequency for Watering Greenhouse Plants	2	(ee)(5)	8164-C	8931-G
4. Determine Water Quality	1	(ee)(5)	8164-D	8931-G
5. Identify the Methods of Irrigating Greenhouse Plants	2	(ee)(5)	8164-E	8931-G
6. Identify Special Methods of Watering Selected Greenhouse Plants	2	(ee)(5)	8164-F	8164-F
7. Add Fertilizers and Other Additives Into Irrigation Water	1	(ee)(5)	8164-G	8931-F
F. Select and Identify Propagation Media, Nursery Soils, Compost, Mulches, Soil Mixtures, Fertilizers, and Other Growth Materials	10			
1. Select and Prepare Plant Growing Media	2	(ee)(6)	8165-A	8931-A
2. Identify the Components and Properties of Nursery Soils	2	(ee)(6)	8165-B	8382
3. Use Mulches and Compost	2	(ee)(6)	8165-C	8931-B
4. Fertilize Greenhouse and Nursery Plants	2	(ee)(6)	8165-D	8931-F
5. Identify Plant Growth Regulators	2	(ee)(6)	8165-E	8268-A
G. Understand and Perform the Methods of Propagating Plants	15			
1. Identify the Importance of Asexual Propagation	1	(ee)(7)	8166-A	8930-D
2. Propagate Plants Using Cuttings	5	(ee)(7)	8166-B	8930-D
3. Propagate Plants by Layering, Separation, and Division	5	(ee)(7)	8166-C	8930-D
4. Propagate Plants by Budding and Grafting	2	(ee)(7)	8166-D	8930-D
5. Propagate Plants by Tissue Culture	2	(ee)(7)	8166-E	8930-D
H. Understand Selection, Breeding, and Reproduction of Plants	5			
1. Recognize the Sexual Reproduction of Plants	2	(ee)(8)	8167-A	8167-A
2. Reproduce Plants by Cross Pollination	3	(ee)(8)	8167-B	8167-B

UNITS AND TOPICS OF INSTRUCTION	PERIODS OF INSTRUCTION	ESSENTIAL ELEMENTS	STUDENT MATERIALS LEVEL I - LEVEL II	
I. Grow Greenhouse Plants	10			
1. Schedule Plant Production	4	(ee)(9)	8168-A	8932-A
2. Transplant Seedlings	4	(ee)(9)	8168-B	8168-B
3. Use 'Plugs' and Other Specialized Systems in Growing Greenhouse Plants	2	(ee)(9)	8168-C	8168-C
J. Grow Nursery Stock, Fruits and Nuts, Vegetables, and Ornamentals	15			
1. Grow Nursery Stock	4	(ee)(10)	8169-A	8931-E
2. Grow Fruits and Nuts	4	(ee)(10)	8169-B	8169-B
3. Grow Vegetables	4	(ee)(10)	8169-C	8169-C
4. Grow Ornamentals in Containers	3	(ee)(10)	8169-D	8169-D
K. Develop and Maintain the Landscape and Turfgrasses	15			
1. Recognize the Process of Landscape Design	1	(ee)(11)	8170-A	8911-A
2. Prepare Landscape Plans	3	(ee)(11)	8170-B	8912-B,8912-D 8912-E,8912-F
3. Identify and Select Turfgrass Varieties	1	(ee)(11)	8170-C	8918-C
4. Establish Plants and Turf Areas in the Landscape	3	(ee)(11)	8170-D	8918-A,8918-B
5. Use Indigenous Plants in the Landscape	2	(ee)(11)	8170-E	8170-E
6. Maintain Landscape and Turf Areas	5	(ee)(11)	8170-F	8919-A,8919-B 8919-C
L. Identify and Control Diseases, Insects, Organisms, and Weeds	10			
1. Identify and Control Plant Pests	4	(ee)(12)	8171-A	8931-H
2. Recognize the Biological Control of Plant Pests	3	(ee)(12)	8171-B	8171-B
3. Recognize the Non-chemical Control of Plant Pests	3	(ee)(12)	8171-C	8171-C
M. Determine Floral Design Accessories, Arranging, and Judging	15			
1. Identify the Principles of Floral Design	3	(ee)(13)	8172-A	8946-A,8946-B
2. Construct Floral Designs Using the Proper Equipment	5	(ee)(13)	8172-B	8947-A,8948-A 8949-A
3. Develop Floral Designs for Special Occasions	5	(ee)(13)	8172-C	8172-C
4. Evaluate Floral Designs	2	(ee)(13)	8172-D	8172-D

UNITS AND TOPICS OF INSTRUCTION	PERIODS OF INSTRUCTION	ESSENTIAL ELEMENTS	STUDENT MATERIALS LEVEL I	STUDENT MATERIALS LEVEL II
N. Calculate Production Costs	5			
1. Determine the Costs of Horticultural Products and Services	3	(ee)(14)	8173-A	8272-C
2. Analyze Profit and Loss	2	(ee)(14)	8173-B	8272-A
O. Understand Marketing, Labeling, Pricing, Displaying, Advertising, Financial Control, Credit, Records, and Accounts	10			
1. Describe Labeling, Pricing, Displaying, and Advertising Used in Marketing Horticultural Plants and Supplies	5	(ee)(15)	8174-A	8174-A
2. Describe Financial Control, Credit, Records, and Accounts Used in Managing a Horticultural Business	5	(ee)(15)	8174-B	8174-B
P. Select, Operate, Maintain, and Repair Horticultural Tools and Equipment	5			
1. Select and Operate Equipment for Horticultural Tasks	3	(ee)(16)	8175-A	8929-A
2. Maintain and Repair Horticultural Tools and Equipment	2	(ee)(16)	8175-B	8929-A,8933-E
Q. Recognize Safe Work Practices That Apply to Horticultural Related Occupations	10			
1. Recognize Personal Safety Measures	3	(a)(4),(ee)(17)	8176-A	8928-A
2. Use Safety Practices in Selecting, Applying, Storing, and Disposing Chemicals	2	(a)(4),(ee)(17)	8176-B	8928-A
3. Use Safety Practices in Selecting, Operating, and Storing Hand Tools, Small Power Tools, and Large Equipment	3	(a)(4),(ee)(16) (ee)(17)	8176-C	8928-A
4. Recognize Occupational Safety Measures	2	(a)(4),(ee)(17)	8176-D	8176-D

UNITS AND TOPICS OF INSTRUCTION	PERIODS OF INSTRUCTION	ESSENTIAL ELEMENTS	STUDENT MATERIALS LEVEL I	LEVEL II
R. Plan and Conduct Leadership Activities Related to Horticultural Occupations	10			
1. Develop Communication Skills	3	(a)(1)(A-D) (a)(5)(A-F) (ee)(18)	8373-A,8373-D	8373-A,8373-D
2. Develop Interpersonal Relations	3	(a)(1)(A-D) (a)(5)(A-F) (ee)(18)	8736-B	8736-B
3. Develop Qualities of Citizenship and Leadership	2	(a)(1)(A-D) (a)(5)(A-F) (ee)(18)	8374-A	8374-A
4. Develop Organizational Skills	2	(a)(1)(A-D) (a)(5)(A-F) (ee)(18)	8742-A	8742-A
S. Plan and Conduct Supervised Agricultural Experience Programs to Include Personal Financial Management and Explore Entrepreneurial and Career Opportunities	10			
1. Explore Entrepreneurial and Career Opportunities in Horticulture	3	(a)(2)(A-L) (a)(3)(A-D) (a)(6)(A-I) (a)(7),(ee)(19)	8178-A,8747-A	8274-A,8747-A
2. Develop Personal Job Skills	3	(a)(2)(A-L) (a)(3)(A-D) (a)(6)(A-I) (a)(7),(ee)(19)	8372-A	8372-A
3. Develop Financial Management Skills	3	(a)(2)(A-L) (a)(3)(A-D) (a)(6)(A-I) (a)(7),(ee)(19)	8375-B,8375-C	8375-B,8375-C
4. Develop SAEP Recordkeeping Skills	1	(a)(2)(A-L) (a)(3)(A-D) (a)(6)(A-I) (a)(7),(ee)(19)	8502,SAEP-G 8002-C,8002-D	8502,SAEP-G 8002-C,8002-D

TOPIC GOALS AND OBJECTIVES

UNIT A: UNDERSTAND PLANT CLASSIFICATION

Topic A-1: Name Plants Scientifically (8160-A / 8927-A)

Topic Goal:

The student shall be provided the opportunity to name plants scientifically as a means of understanding plant classification.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of scientific plant names;
2. identify the genus name and the species name in a scientific plant name;
3. describe plant characteristics that scientific plant names may describe;
4. explain the advantages of naming plants scientifically; and
5. write and use scientific plant names correctly.

Topic A-2: Use Plant Characteristics to Classify Plants (8160-B / 8927-A)

Topic Goal:

The student shall be provided the opportunity to use plant characteristics as a means of understanding plant classification.

Topic Objectives:

After completing the topic, the student shall be able to:

1. define an annual, biennial, and perennial based on plant life cycle classification;
2. identify trees, shrubs, and vines based on growth habit classification;
3. classify plants based on size classification;
4. describe the shapes of plants based on form classification; and
5. distinguish between deciduous and evergreen plants based on foliage retention classification.

UNIT B: IDENTIFY PLANTS BY LEAF, FLOWER, BUD, AND STEM CHARACTERISTICS

Topic B-1: Recognize Leaf Characteristics (8161-A / 8927-A)

Topic Goal:

The student shall be provided the opportunity to recognize leaf characteristics as a means of identifying plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify the parts of a plant leaf;
2. determine leaf arrangement on a plant stem;
3. identify leaf venation patterns;
4. recognize the complexity of leaves;
5. identify leaf shapes;
6. recognize the characteristics of leaf margins; and
7. determine the presence or absence of surface features on plant leaves.

Topic B-2: Identify Flower Characteristics (8161-B / 8930-B)

Topic Goal:

The student shall be provided the opportunity to identify flower characteristics as a means of identifying plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify the parts of a flower;
2. describe the function of each part of a flower; and
3. recognize flower inflorescences.

Topic B-3: Recognize Bud Characteristics (8161-C / 8927-A)

Topic Goal:

The student shall be provided the opportunity to recognize bud characteristics as a means of identifying plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify buds on a plant stem; and
2. distinguish between terminal buds, axillary buds, adventitious buds, and fruit buds.

Topic B-4: Identify Stem Characteristics (8161-C / 8927-A)

Topic Goal:

The student shall be provided the opportunity to identify stem characteristics as a means of identifying plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify stem characteristics that are important in plant identification; and
2. recognize stem adaptations that provide protection for plants.

UNIT C: IDENTIFY STRUCTURES AND EQUIPMENT USED IN PRODUCING GREENHOUSE, ORNAMENTAL, AND NURSERY PLANTS

Topic C-1: Identify Greenhouse Structures and Equipment (8162-A / 8933-B, 8933-C, 8933-D)

Topic Goal:

The student shall be provided the opportunity to identify greenhouse structures and equipment used in the production of greenhouse and ornamental plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of greenhouse structures in the production of horticultural plants;
2. identify the types of greenhouse structures;
3. label the parts of a greenhouse structure; and
4. identify greenhouse equipment used in the production of horticultural plants.

Topic C-2: Recognize Nursery Structures and Equipment (8162-B / 8929-A, 8933-B)

Topic Goal:

The student shall be provided the opportunity to recognize nursery structures and equipment used in the production of nursery plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of nursery structures in the production of horticultural plants;
2. identify the types of nursery structures; and
3. identify nursery equipment used in the production of horticultural plants.

UNIT D: DETERMINE GREENHOUSE ENVIRONMENTAL CONTROLS

Topic D-1: Recognize the Environmental Requirements of Greenhouse Plants (8163-A / 8934-A, 8934-B)

Topic Goal:

The student shall be provided the opportunity to recognize the environmental requirements of greenhouse plants as a means of controlling greenhouse environment.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe the importance of temperature for plant growth;
2. explain the effects of humidity on plant growth; and
3. explain the effects of light on plant growth.

Topic D-2: Control Greenhouse Temperature (8163-B / 8934-A)

Topic Goal:

The student shall be provided the opportunity to become familiar with the methods used to control greenhouse temperature.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the effects of temperature on plant growth;
2. properly use thermometers and thermostats to monitor greenhouse temperature;
3. describe methods of greenhouse cooling; and
4. describe methods of greenhouse heating.

Topic D-3: Control Greenhouse Humidity (8163-C / 8934-A)

Topic Goal:

The student shall be provided the opportunity to gain an awareness of the importance of controlling greenhouse humidity.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of controlling greenhouse humidity; and
2. describe the function of a humidistat in controlling greenhouse humidity.

Topic D-4: Control Greenhouse Ventilation (8163-C / 8934-A)

Topic Goal:

The student shall be provided the opportunity to become familiar with the methods used to control greenhouse ventilation.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe ventilation and its function in controlling greenhouse humidity; and
2. describe the methods used for ventilating greenhouses.

Topic D-5: Control Greenhouse Light (8163-D / 8934-B)

Topic Goal:

The student shall be provided the opportunity to gain an awareness of the methods used to control greenhouse light.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify the types of lamps used for providing supplemental lighting in horticultural plant production; and
2. describe methods of providing shade for horticultural plants.

UNIT E: WATER AND FEED GREENHOUSE PLANTS

Topic E-1: Identify the Functions of Water in Plants (8164-A / 8931-G)

Topic Goal:

The student shall be provided the opportunity to identify the functions of water in plant growth and development.

Topic Objectives:

After completing the topic, the student shall be able to:

1. name two essential nutrients that water provides for plant growth and development;
2. explain the importance of water as a part of plant cells;
3. describe how water affects the turgidity of plants;
4. observe how water serves as a medium for transporting nutrients and food reserves throughout a plant;
5. explain the importance of water in the process of photosynthesis;
6. observe how water affects the movement of plant parts;
7. explain how the water within a plant serves as a buffer against sudden changes in the environment; and
8. describe the functions of water in the growing medium or soil surrounding plant roots.

Topic E-2: Identify the Effects of Water on Plant Growth (8164-B / 8931-G)

Topic Goal:

The student shall be provided the opportunity to identify the effects water has on plant growth and development.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe the effects that under-watering has on plant growth and development; and
2. explain the effects that over-watering has on plant growth and development.

Topic E-3: Determine the Frequency for Watering Greenhouse Plants (8164-C / 8931-G)

Topic Goal:

The student shall be provided the opportunity to gain an awareness for determining the frequency for watering greenhouse plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain how container type affects watering frequency;
2. describe how the location of individual plants in relation to the growing environment affects the frequency of watering;
3. recall how environmental conditions affect watering frequency;
4. observe how growing media has an effect on watering frequency;
5. discuss why plant type, stage of plant growth, and plant size affect the frequency of watering; and
6. explain how the level of soluble salts in irrigation water affects the frequency of watering.

Topic E-4: Determine Water Quality (8164-D / 8931-G)

Topic Goal:

The student shall be provided the opportunity to determine the quality of water used in watering greenhouse plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain why water quality is an important consideration when watering plants;
2. describe the effects that poor quality water has on plant growth and development;
3. use a conductivity meter to measure the soluble salts in irrigation water; and
4. use a pH meter to measure the pH of irrigation water.

Topic E-5: Identify the Methods of Irrigating Greenhouse Plants (8164-E / 8931-G)

Topic Goal:

The student shall be provided the opportunity to become familiar with the various methods used to irrigate greenhouse plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the advantages and disadvantages of manual watering;
2. identify two types of automatic watering systems commonly used in greenhouses;
3. describe the advantages and disadvantages of capillary mat watering; and
4. provide water to greenhouse plants using various irrigation methods.

Topic E-6: Identify Special Methods of Watering Selected Greenhouse Plants (8164-F)

Topic Goal:

The student shall be provided the opportunity to become familiar with special methods used to water selected greenhouse plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. discuss the importance of misting or spraying selected greenhouse plants;
2. explain why soaking is an effective method for watering some greenhouse plants; and
3. demonstrate how to properly water tank-type bromeliads.

Topic E-7: Add Fertilizers and Other Additives Into Irrigation Water (8164-G / 8931-F)

Topic Goal:

The student shall be provided the opportunity to add fertilizers and other additives into irrigation water as a means of feeding greenhouse plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. properly mix soluble plant fertilizer into irrigation water;
2. define fertigation; and
3. identify two types of proportioners used to add fertilizer solutions into irrigation water.

UNIT F: SELECT AND IDENTIFY PROPAGATION MEDIA, NURSERY SOILS, COMPOST, MULCHES, SOIL MIXTURES, FERTILIZERS, AND OTHER GROWTH MATERIALS

Topic F-1: Select and Prepare Plant Growing Media (8165-A / 8931-A)

Topic Goal:

The student shall be provided the opportunity to select and prepare plant growing media.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe the functions of plant growing media;
2. identify organic and inorganic growing media components; and
3. mix soilless growing media using selected components.

Topic F-2: Identify the Components and Properties of Nursery Soils (8165-B / 8382)

Topic Goal:

The student shall be provided the opportunity to become familiar with the components and properties of soils found in nursery fields.

Topic Objectives:

After completing the topic, the student shall be able to:

1. recognize the primary components of the soil; and
2. identify properties of the soil.

Topic F-3: Use Mulches and Compost (8165-C / 8931-B)

Topic Goal:

The student shall be provided the opportunity to identify and prepare mulches and composts.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe the benefits of mulching horticultural plants;
2. recognize the advantages of using compost;
3. prepare mulches; and
4. construct and use a compost pile.

Topic F-4: Fertilize Greenhouse and Nursery Plants (8165-D / 8931-F)

Topic Goal:

The student shall be provided the opportunity to recognize plant nutrition requirements and apply fertilizers properly.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain why fertilizing greenhouse and nursery plants is important;
2. identify the essential elements required for plant growth;
3. distinguish between the various fertilizer classifications;
4. identify methods of applying fertilizers to greenhouse and nursery plants; and
5. apply fertilizer to greenhouse and nursery plants.

Topic F-5: Identify Plant Growth Regulators (8165-E / 8268-A)

Topic Goal:

The student shall be provided the opportunity to identify plant growth regulators that modify plant growth.

Topic Objectives:

After completing the topic, the student shall be able to:

1. define a plant growth regulator;
2. identify plant growth regulators used in greenhouse and nursery crop production;
3. explain the effects of plant growth regulators on plant growth; and
4. apply plant growth regulators to greenhouse and nursery plants.

UNIT G: UNDERSTAND AND PERFORM THE METHODS OF PROPAGATING PLANTS

Topic G-1: Identify the Importance of Asexual Propagation (8166-A / 8930-D)

Topic Goal:

The student shall be provided the opportunity to gain an awareness of the importance of propagating plants asexually.

Topic Objectives:

After completing the topic, the student shall be able to:

1. define asexual propagation;
2. explain the advantages of propagating plants asexually; and
3. identify various methods of asexual propagation.

Topic G-2: Propagate Plants Using Cuttings (8166-B / 8930-D)

Topic Goal:

The student shall be provided the opportunity to asexually propagate plants using various types of cuttings.

Topic Objectives:

After completing the topic, the student shall be able to:

1. define a cutting;
2. identify stem cuttings, root cuttings, leaf-bud cuttings, and leaf cuttings;
3. explain the uses of rooting hormones for asexually propagating plants by cuttings;
4. describe the characteristics of growing media used for rooting cuttings;
5. describe the environmental conditions that affect the rooting of cuttings; and
6. propagate plants using cuttings.

Topic G-3: Propagate Plants by Layering, Separation, and Division (8166-C / 8930-D)

Topic Goal:

The student shall be provided the opportunity to asexually propagate plants by means of layering, separation, and division.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe the advantages of layering as a means of asexual plant propagation;
2. identify various methods of ground and air layering;
3. identify methods of separation and division used to asexually propagate plants; and
4. propagate plants using methods of layering, separation, and division.

Topic G-4: Propagate Plants by Budding and Grafting (8166-D / 8930-D)

Topic Goal:

The student shall be provided the opportunity to asexually propagate plants by means of budding and grafting.

Topic Objectives:

After completing the topic, the student shall be able to:

1. define grafting;
2. identify the scion and rootstock of a grafted plant;
3. describe the advantages of grafting;
4. identify various forms of grafting;
5. identify patch budding, T-budding, and chip budding; and
6. propagate woody plants using methods of budding and grafting.

Topic G-5: Propagate Plants by Tissue Culture (8166-E / 8930-D)

Topic Goal:

The student shall be provided the opportunity to become familiar with tissue culture as a method for asexually propagating plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. define tissue culture;
2. describe the advantages of propagating plants by tissue culture;
3. describe the stages in tissue culture development; and
4. explain why a sterile environment is necessary for the success of tissue culture.

UNIT H: UNDERSTAND SELECTION, BREEDING, AND REPRODUCTION OF PLANTS

Topic H-1: Recognize the Sexual Reproduction of Plants (8167-A)

Topic Goal:

The student shall be provided the opportunity to understand the sexual reproduction cycle of plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of plant reproduction by seeds;
2. describe the steps in the seed formation process; and
3. reproduce plants by seed.

Topic H-2: Reproduce Plants by Cross Pollination (8167-B)

Topic Goal:

The student shall be provided the opportunity to understand the principles of reproducing plants by means of cross-pollination.

Topic Objectives:

After completing the topic, the student shall be able to:

1. define cross-pollination;
2. explain the principles of cross-pollination; and
3. reproduce plants from seed produced by means of cross-pollination.

UNIT I: GROW GREENHOUSE PLANTS

Topic I-1: Schedule Plant Production (8168-A / 8932-A)

Topic Goal:

The student shall be provided the opportunity to gain an awareness of the importance of crop scheduling in greenhouse plant production.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of greenhouse crop scheduling;
2. identify seasonal greenhouse crops that must be carefully scheduled; and
3. schedule greenhouse crops so they are marketable by a specific date.

Topic I-2: Transplant Seedlings (8168-B)

Topic Goal:

The student shall be provided the opportunity to properly transplant seedlings.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of transplanting seedlings from seedling flats;
2. describe the process of properly transplanting seedlings;
3. explain the importance of hardening-off seedlings; and
4. properly transplant seedlings from seedling flats into larger containers.

Topic I-3: Use 'Plugs' and Other Specialized Systems in Growing Greenhouse Plants (8168-C)

Topic Goal:

The student shall be provided the opportunity to gain an awareness of the uses of 'plugs' and other specialized systems in the production of greenhouse plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify seedling 'plugs';
2. describe the advantages and disadvantages of 'plug' systems; and
3. plant seedlings from a plug system.

UNIT J: GROW NURSERY STOCK, FRUITS AND NUTS, VEGETABLES, AND ORNAMENTALS

Topic J-1: Grow Nursery Stock (8169-A / 8931-E)

Topic Goal:

The student shall be provided the opportunity to learn the requirements for growing plants for nursery crop production.

Topic Objectives:

After completing the topic, the student shall be able to:

1. discuss the cultural requirements for growing nursery stock in field soils;
2. describe the cultural requirements for growing nursery stock in containers; and
3. grow nursery stock.

Topic J-2: Grow Fruits and Nuts (8169-B)

Topic Goal:

The student shall be provided the opportunity to learn the requirements for growing fruit and nut crops.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify types of fruit and nut crops;
2. describe the cultural requirements for growing fruit and nut crops; and
3. grow fruit and nut crops.

Topic J-3: Grow Vegetables (8169-C)

Topic Goal:

The student shall be provided the opportunity to learn the requirements for growing vegetable crops.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify types of vegetable crops;
2. describe the cultural requirements for growing vegetable crops; and
3. grow vegetable crops.

Topic J-4: Grow Ornamentals in Containers (8169-D)

Topic Goal:

The student shall be provided the opportunity to grow ornamentals in specialty containers.

Topic Objectives:

After completing the topic, the student shall be able to:

1. design and prepare a dish garden;
2. prepare a terrarium or bottle garden; and
3. prepare a wire hanging basket.

UNIT K: DEVELOP AND MAINTAIN THE LANDSCAPE AND TURFGRASSES

Topic K-1: Recognize the Process of Landscape Design (8170-A / 8911-A)

Topic Goal:

The student shall be provided the opportunity to identify the phases and steps of the design process.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe the design process used in landscape design;
2. identify the steps in the program phase of the design process; and
3. identify the steps in the design phase of the design process.

Topic K-2: Prepare Landscape Plans (8170-B / 8912-B, 8912-D, 8912-E, 8912-F)

Topic Goal:

The student shall be provided the opportunity to design and prepare landscape plans.

Topic Objectives:

After completing the topic, the student shall be able to:

1. name the elements and principles of landscape design;
2. discuss the importance of developing preliminary plans for a landscape site;
3. describe the techniques for designing the use areas of a landscape site; and
4. identify graphic details used in developing the final plan for a landscape site.

Topic K-3: Identify and Select Turfgrass Varieties (8170-C / 8918-C)

Topic Goal:

The student shall be provided the opportunity to gain an awareness of the factors considered when identifying and selecting turfgrass varieties for landscape sites.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify several varieties of turfgrasses used in landscapes;
2. describe how environmental conditions affect turfgrass selection;
3. explain why soil conditions are important in turfgrass selection;
4. describe how use considerations affect turfgrass selction;
5. discuss why turfgrass compatibility is an important consideration in its selection; and
6. discuss why maintenance is an important consideration in turfgrass selection.

Topic K-4: Establish Plants and Turf Areas in the Landscape (8170-D / 8918-A, 8918-B)

Topic Goal:

The student shall be provided the opportunity to learn the proper techniques of site preparation and landscape plant installation.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain why site preparation is important before installing plants on a landscape site;
2. describe landscape site preparation tasks;
3. explain the importance of properly installing plants on a landscape site;
4. discuss the techniques for installing plants on a landscape site; and
5. properly prepare a landscape site and install plants on the site.

Topic K-5: Use Indigenous Plants in the Landscape (8170-E)

Topic Goal:

The student shall be provided the opportunity to gain an awareness of the importance of using indigenous plants in the landscape.

Topic Objectives:

After completing the topic, the student shall be able to:

1. define an indigenous plant;
2. explain the importance of using indigenous plants in the landscape;
3. describe the principles of landscaping with indigenous plants; and
4. install indigenous plants on a landscape site.

Topic K-6: Maintain Landscape and Turf Areas (8170-F / 8919-A, 8919-B, 8919-C)

Topic Goal:

The student shall be provided the opportunity to become familiar with techniques of maintaining landscape and turf areas.

Topic Objectives:

After completing the topic, the student shall be able to:

1. discuss methods of watering landscape plants;
2. describe effective and efficient watering practices used in watering landscape plants;
3. explain the importance of pruning landscape plants;
4. describe the methods and techniques used to prune landscape plants;
5. explain the importance of properly mowing turfgrass in the landscape;
6. discuss the proper methods and heights for mowing turfgrass in the landscape; and
7. properly maintain landscape and turf areas.

UNIT L: IDENTIFY AND CONTROL DISEASES, INSECTS, ORGANISMS, AND WEEDS

Topic L-1: Identify and Control Plant Pests (8171-A / 8931-H)

Topic Goal:

The student shall be provided the opportunity to identify and control insects, diseases, and weeds which affect horticultural plants.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify insects that attack horticultural plants;
2. recognize the symptoms of disease-causing pests;
3. explain why weeds are considered plant pests; and
4. describe methods of controlling plant pests.

Topic L-2: Recognize the Biological Control of Plant Pests (8171-B)

Topic Goal:

The student shall be provided the opportunity to become familiar with biological methods of controlling plant pests.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of biological pest control; and
2. describe methods of biological pest control.

Topic L-3: Recognize the Non-chemical Control of Plant Pests (8171-C)

Topic Goal:

The student shall be provided the opportunity to become familiar with non-chemical methods of controlling plant pests.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of non-chemical pest control; and
2. describe methods of non-chemical pest control.

UNIT M: DETERMINE FLORAL DESIGN ACCESSORIES, ARRANGING, AND JUDGING

Topic M-1: Identify the Principles of Floral Design (8172-A / 894[illegible]-A, 8946-B)

Topic Goal:

The student shall be provided the opportunity to become familiar with the elements and principles of floral design used to create floral arrangements.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify the design elements of line, form, texture, and color in a floral arrangement; and
2. describe the design principles of focal point, balance, proportion, and rhythm in a floral arrangement.

Topic M-2: Construct Floral Designs Using the Proper Equipment
(8172-B / 8947-A, 8948-A, 8949-A)

Topic Goal:

The student shall be provided the opportunity to become familiar with the types of materials and equipment needed for constructing floral designs.

Topic Objectives:

After completing the topic, the student shall be able to:

1. select containers that are functional and suitable for specific floral designs;
2. identify and use cutting tools for preparing floral designs;
3. identify and prepare stem support materials; and
4. identify and use adhesive and wiring materials when preparing floral designs.

Topic M-3: Develop Floral Designs for Special Occasions (8172-C)

Topic Goal:

The student shall be provided the opportunity to become familiar with various types of floral designs used for special occasions and to develop floral arrangements appropriate for these occasions.

Topic Objectives:

After completing the topic, the student shall be able to:

1. discuss the functions of floral designs used for special occasions;
2. identify types of floral designs used for special occasions; and
3. prepare appropriate floral arrangements for special occasions.

Topic M-4: Evaluate Floral Designs (8172-D)

Topic Goal:

The student shall be provided the opportunity to evaluate floral arrangements based on the elements and principles of floral design.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify factors used in the evaluation of floral designs; and
2. evaluate floral arrangements based on the elements and principles of floral design.

UNIT N: CALCULATE PRODUCTION COSTS

Topic N-1: Determine the Costs of Horticultural Products and Services (8173-A / 8272-C)

Topic Goal:

The student shall be provided the opportunity to become aware of the aspects involved in determining the costs of horticultural products and services.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify factors that affect the production costs of greenhouse and nursery crops; and
2. calculate the production costs of greenhouse and nursery crops.

Topic N-2: Analyze Profit and Loss (8173-B / 8272-A)

Topic Goal:

The student shall be provided the opportunity to become familiar with the factors that affect profit and loss.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the importance of analyzing profit and loss;
2. identify a profit-and-loss statement; and
3. analyze profit and loss using a ratio analysis.

UNIT O: UNDERSTAND MARKETING, LABELING, PRICING, DISPLAYING, ADVERTISING, FINANCIAL CONTROL, CREDIT, RECORDS, AND ACCOUNTS

Topic O-1: Describe Labeling, Pricing, Displaying, and Advertising Used in Marketing Horticultural Plants and Supplies (8174-A)

Topic Goal:

The student shall be provided the opportunity to become aware of the aspects involved in marketing horticultural plants and supplies.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe methods of labeling horticultural plants and supplies;
2. explain the pricing of horticultural plants and supplies;
3. describe methods for displaying horticultural plants and supplies; and
4. identify methods used to advertise horticultural plants and supplies.

Topic O-2: Describe Financial Control, Credit, Records, and Accounts Used in Managing a Horticultural Business (8174-B)

Topic Goal:

The student shall be provided the opportunity to become aware of the aspects involved in managing a horticultural business.

Topic Objectives:

After completing the topic, the student shall be able to:

1. discuss the use of credit in managing a horticultural business;
2. describe the characteristics of properly kept records; and
3. describe the types of record used in horticultural businesses.

UNIT P: SELECT, OPERATE, MAINTAIN, AND REPAIR HORTICULTURAL TOOLS AND EQUIPMENT

Topic P-1: Select and Operate Equipment for Horticultural Tasks (8175-A / 8929-A)

Topic Goal:

The student shall be provided the opportunity to identify and understand how to properly use tools and equipment for performing horticultural tasks.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify and understand how to properly use hand tools;
2. identify and understand how to properly use small power tools; and
3. identify and understand how to properly use large power equipment.

Topic P-2: Maintain and Repair Horticultural Tools and Equipment (8175-B / 8929-A, 8933-E)

Topic Goal:

The student shall be provided the opportunity to become familiar with the importance and the procedures for maintaining and repairing horticultural tools and equipment.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe the importance of properly maintaining and repairing horticultural tools and equipment;
2. discuss procedures for maintaining hand tools, small power tools, and large power equipment; and
3. describe the maintenance of greenhouse structures and equipment.

UNIT Q: RECOGNIZE SAFE WORK PRACTICES THAT APPLY TO HORTICULTURAL RELATED OCCUPATIONS

Topic Q-1: Recognize Personal Safety Measures (8176-A / 8928-A)

Topic Goal:

The student shall be provided the opportunity to gain an awareness of personal safety measures that apply to horticultural related occupations.

Topic Objectives:

After completing the topic, the student shall be able to:

1. name several factors to be considered in developing good personal safety habits;
2. describe ways to avoid unsafe conditions and prevent unsafe actions;
3. describe the proper techniques for safely handling materials; and
4. explain the importance of dressing appropriately and wearing protective clothing when performing certain tasks.

Topic Q-2: Use Safety Practices in Selecting, Applying, Storing, and Disposing Chemicals (8176-B / 8928-A)

Topic Goal:

The student shall be provided the opportunity to develop an awareness of the safety practices that apply to selecting, applying, storing, and disposing of chemicals.

Topic Objectives:

After completing the topic, the student shall be able to:

1. identify the signal words on the labels of chemicals that indicate chemical toxicity;
2. describe the guidelines for handling and mixing chemicals; and
3. describe the guidelines for storing and disposing chemicals.

Topic Q-3: Use Safety Practices in Selecting, Operating, and Storing Hand Tools, Small Power Tools, and Large Equipment (8176-C / 8928-A)

Topic Goal:

The student shall be provided the opportunity to develop an awareness of the safety practices that apply to selecting, operating, and storing of hand tools, small power tools, and large equipment.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe common causes of hand tool injuries;
2. describe safety precautions for using hand tools;
3. explain the proper safety precautions for using a ladder; and
4. describe safety precautions that apply to using small power tools and large equipment.

Topic Q-4: Recognize Occupational Safety Measures (8176-D)

Topic Goal:

The student shall be provided the opportunity to develop an awareness of occupational safety measures in the workplace.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe the importance of safety in the workplace; and
2. identify safety precautions for creating a safe workplace.

UNIT R: PLAN AND CONDUCT LEADERSHIP ACTIVITIES RELATED TO HORTICULTURAL OCCUPATIONS

Topic R-1: Develop Communication Skills (8373-A & 8373-D)

Topic Goal:

The student shall be provided the opportunity to develop effective written and oral communication skills as a means of improving communication skills.

Topic Objectives:

After completing the topic, the student shall be able to:

1. recognize the importance of effective written and oral communication;
2. discuss the different types of oral communication;
3. recognize the importance of good listening skills to effective communication;
4. identify poor and good speaking qualities;
5. discuss the different types of written communications and their purposes; and
6. list basic steps to follow when writing.

Topic R-2: Develop Interpersonal Relations (8736-B)

Topic Goal:

The student shall be provided the opportunity to learn and develop skills necessary for interpersonal relationships.

Topic Objectives:

After completing the topic, the student shall be able to:

1. explain the reasons for understanding and respecting the views, ideas, and cultural differences of others;
2. describe the importance of establishing a positive self image and positive image of others; and
3. discuss ways leaders can deal with disturbing behaviors.

Topic R-3: Develop Qualities of Citizenship and Leadership (8374-A)

Topic Goal:

The student shall be provided the opportunity to develop life skills necessary for effective leadership and participate in leadership activities in horticulture through the FFA.

Topic Objectives:

After completing the topic, the student shall be able to:

1. realize the importance of effective life skills;
2. recognize life skills necessary for effective leadership;
3. evaluate personal life skills acquired;
4. recognize leadership and personal life skills development opportunities; and
5. participate in various activities to further develop leadership skills.

Topic R-4: Develop Organizational Skills (8742-A)

Topic Goal:

The student shall be provided the opportunity to identify the structure of a group or organization and recognize different degrees of activity or participation by its members.

Topic Objectives:

After completing the topic, the student shall be able to:

1. define the boundaries of group or organizational membership;
2. discuss means of attracting people to group membership; and
3. describe methods of maintaining group membership and increasing individual participation.

UNIT S: PLAN AND CONDUCT SUPERVISED AGRICULTURAL EXPERIENCE PROGRAMS TO INCLUDE PERSONAL FINANCIAL MANAGEMENT AND EXPLORE ENTREPRENEURIAL AND CAREER OPPORTUNITIES

Topic S-1: Explore Entrepreneurial and Career Opportunities in Horticulture
(8178-A & 8747-A / 8274-A & 8747-A)

Topic Goal:

The student shall be provided the opportunity to become familiar with the characteristics of entrepreneurs and to discuss entrepreneurial and career opportunities available in horticulture related occupations.

Topic Objectives:

After completing the topic, the student shall be able to:

1. describe the characteristics and activities of entrepreneurs;
2. identify several types of career opportunities in horticulture;
3. describe the requirements of various careers in horticulture; and
4. explain the duties and responsibilities required of employees in horticulture careers.

Topic S-2: Develop Personal Job Skills (8372-A)

Topic Goal:

The student shall be provided the opportunity to understand the importance of professional and ethical work habits and employee/employer and employee/employee relationships.

Topic Objectives:

After completing the topic, the student shall be able to:

1. discuss the importance of proper employee/employer relationships;
2. discuss the importance of proper employee/employee relationships;
3. list good traits of an employee; and
4. list items that should be provided by a good employer.

Topic S-3: Develop Financial Management Skills (8375-B & 8375-C)

Topic Goal:

The student shall be provided the opportunity to describe the importance of budgeting and personal finance skills and procedures to develop them.

Topic Objectives:

After completing the topic, the student shall be able to:

1. recognize the advantages of planning a budget;
2. describe categories of a sample budget;
3. discuss the process of using checking, savings, and credit accounts in personal finances; and
4. secure information on the different types of checking accounts, savings accounts, and credit accounts from financial institutions.

Topic S-4: Develop SAEP Recordkeeping Skills (8502, SAEP-G, 8002-C, & 8002-D)

Topic Goal:

The student shall be provided the opportunity to develop recordkeeping skills as part of planning and conducting a supervised agricultural experience program.

Topic Objectives:

After completing the topic, the student shall be able to:

1. recognize the importance of supervised agricultural experience program records as a means of recordkeeping skill development;
2. recognize the characteristics of a successful supervised agricultural experience program;
3. satisfy the state requirements for a supervised agricultural experience program;
4. demonstrate proper recordkeeping skills; and
5. maintain records of a supervised agricultural experience program.

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